

Division.	NUMBER OF ANIMALS IMPOUNDED. DURING 1891-92.			NUMBER OF ANIMALS IMPOUNDED DURING 1892-93.		
	In open forests.	In closed forests.	Total.	In open forests.	In closed forests.	Total.
Northern Division, Kánara ...	...	173	173	...	207	207
Central Division, Kánara ...	346	194	540	129	417	546
Southern Division, Kánara ...	121	122	243	76	43	119
Belgaum ... ..	1,892	1,239	3,131	3,178	1,750	4,928
Dhárwár ... ..	686	1,680	2,366	...	...	...
Bijápur ... ..	1,279	...	1,279	...	...	...
Kolába ... ..	...	763	763	593	...	593
Ratnágiri ... ..	119	112	231	...	372	372
Total ...	4,443	4,283	8,726	3,976	2,789	6,765

123. The table shows a considerable increase of impoundings in Belgaum. The small number in the previous year was, however, due to the fact that the forests of Gokák and Parasgad were opened to free-grazing on account of the fodder scarcity of 1891-92, and the number of cattle impounded during that year fell, in consequence, in much the same ratio, in regard to the number impounded during 1890-91, as that in which it rose in 1892-93, as compared with the figures for 1891-92. The number of cattle impounded during 1892-93 was, in fact, less than that reported for 1890-91.

(c). IMPROVEMENT OF FOREST-GROWTH.

(1). *Natural Reproduction.*

I.—By Seed and II.—By Coppice.

124. *Northern Division of Kánara.*—The Divisional Officer reports that natural reproduction in teak- and blackwood-forests has continued good, but that teak is more backward in reproduction by seed than other species. This is to be expected, and the comparatively-slow natural reproduction of teak from seed will have to be made up for artificially. Mr. Talbot remarked that teak-seedlings were plentiful in the forest in the neighbourhood of the Kátnál, Birchi and Kálánadi streams.

125. The reproduction from stools in the firewood-*coupes* was good.

126. *Central Division of Kánara.*—The Divisional Officer's report affords but little information. He refers to some areas in the Yellápúr-Range in which the reproduction of teak and blackwood was particularly good. In the timber-forests of Yellápúr, which have been protected from fire, natural reproduction by seed of teak and other superior species is very satisfactory.

127. *Southern Division of Kánara.*—In the specially-protected forests some signs of natural reproduction by seed were noticed, and teak-seedlings are said to be plentiful in the Bilki-forests, but, generally speaking, reproduction is bad in this Division. This is, in a great measure, owing to the numerous *supári*-gardens and *ráb*-lands by which the forests are intersected throughout the greater part of the Division, and which render regeneration and protection from fire very difficult.

128. *Belgaum.*—The reproduction by seed of teak is reported to be satisfactory in the Nágargáli and Kirpoli forests, areas to which teak-seedling-forest is practically confined.

129. In fuel-cuttings, the trees coppice excellently, but have been greatly damaged by fires.

130. In the area (300 acres) fenced in at Hemadge (moist zone) good progress in natural reproduction by seed is noticeable.

131. In the 1,412 acres of scrub jungle at Konnúr in Gokák (dry zone), which were closed two years ago, the improvement from closure is reported to be most marked. Mr. Murray further reports that, whereas in such forests artificial reproduction is expensive and generally unsuccessful, closure is cheaper and successful.

132. *Dhárwár.*—The Divisional Officer reports that, in the cuttings, the reproduction from stools is satisfactory, but that reproduction from seed is very backward.

133. *Bijápur.*—Mr. Bell, who only took charge of the Division last June, reports that the stools, in the Shivpur cutting of last year, are reproducing satisfactorily. Owing to the extreme dryness of the climate, the great demands on the forest, and the difficulty of protection, natural reproduction by seed is very bad.

134. *Kolába*.—Mr. Stewart reports unfavourably of the reproduction by seed of teak and other species, but natural reproduction is, he considers, fairly good in portions of Alibág, Roha and Nágotna.

135. The jungles of Kolába consist almost entirely of coppice including a relatively large quantity of teak, and they coppice well.

136. *Ratnágiri*.—Reproduction by coppice is reported to have been satisfactory; while, that by seed was not. The forests are situated for the greater part on the steepest slopes of the Gháts on which reproduction is naturally slow. The Divisional Officer reports that, although no seedlings could be discovered in the low-lying pure teak-forest of Dápoli, in that of Málván some seedlings, and in the jungles of Kalamboshi a fine growth of *Terminalia*, was observed.

## (2). Artificial Reproduction.

137. *Northern Division of Kánara*.—An experiment was made in the planting-out of teak in bamboo-tubes, as it was found that the seedlings taken up and planted out without special protection failed in most cases. 13,132 seedlings were put out in that way. Of these, 7,723 seedlings are reported to be thriving. This experiment was not, however, properly carried out; the plants were first raised in nurseries or taken from the jungles and afterwards placed in bamboo-tubes, instead of being sown in the tubes in order to prevent all handling of the roots.

138. 600 seedlings of *Terminalia tomentosa*, put down in open places in the Káwár-range, have succeeded.

139. The expenditure incurred in the Division amounted to Rs. 369.

140. *Central Division of Kánara*.—8,683 teak-, 1,991 blackwood- and 1,597 junglewood-plants were put down from nurseries. Of these, 6,237 teak-, 1,242 junglewood- and 1,741 blackwood-plants existed at the close of the year. The operations were particularly successful in the Yellápúr-range, where 4,289 teak-plants, out of a total of 4,418, survived.

141. The following seedlings are also reported to have been obtained from seeds sown in the forests and to be doing well:—

Teak	...	...	...	...	2,377
Blackwood	...	...	...	...	336
Junglewood	...	...	...	...	5,210
					<hr/> 7,923 <hr/>

142. The amount expended was Rs. 678.

143. *Southern Division of Kánara*.—The disease which attacked the trees in the Kásarkód casuarina-plantation has again appeared, and many of the trees have died during the year.

144. In Honávar, 25 acres were planted up with teak-seedlings and 1,515 are reported to be flourishing.

145. Seeds of several kinds were collected and sown broadcast by the guards, as usual, but no good was effected.

146. Nothing was expended in this Division.

147. *Belgaum*.—A teak-nursery was made at Nágargáli, and the young plants were put out in an enclosed portion of the forest with a view to testing the behaviour of young plants under different degrees of shade. Several small nurseries were also made in the Khánápur-range, and the plantation at Deshnur was extended from 156 to 180 acres at a cost of Rs. 96; 918 plants of several kinds were put down. These plants together with those previously planted, are reported to be coming on very well.

148. The amount expended in the Division was Rs. 96.

149. *Dhárwár, Bijápur and Kolába*.—No fresh planting was done in these Divisions. The plants that came up from seeds sown broadcast in Bijápur, and referred to in the last Administration-Report, were killed by drought.

150. The expenditure incurred on plantations was Rs. 161 in Dhárwár, Rs. 17 in Bijápur; in Kolába there was no expenditure.

151. *Ratnágiri*.—17,991 seedlings of casuarina, *Terminalia tomentosa*, teak, &c, were planted in the Dápoli-plantation, and a nursery containing 15,615 seedlings was made. About 8 khandis of seed were also collected and sown broadcast by the guards.

152. The amount expended was Rs. 84.

153. *General Remarks*.—The poor results obtained up to the present time from artificial regeneration in the moist zone are, I feel sure, mainly due to the inexperience of the men employed in lifting and planting seedlings. Otherwise, we should not find naturally-sown seedlings flourishing in places in which planted seedlings have proved a complete failure. By sowing seed in bamboo tubes,